Claims

1. Electromechanical brake (10), especially for vehicles, comprising an electrical actuator generating an actuation force and acting upon at least one friction member (16) in order to press said member to elicit a friction force against a rotational component (14), which is to be braked, of the brake, and a self-boosting device arranged between the friction member (16) and the electrical actuator, said device serving to self-boost the actuation force generated by the electrical actuator, and having at least one wedge (18) with an angle of inclination α that is supported on a corresponding counter bearing (22), characterized in that the electrical actuator has two drive mechanisms (34, 34') which act on the wedge (18) and can work against each other to generate the actuation force, and that in the range of low actuation forces, i.e. in a range $\tan \alpha \cong \mu$, where μ is the coefficient of friction between the friction member (16) and the component (14) to be braked, the two drive mechanisms (34, 34') work against each other to generate the actuation force.

2. Brake according to Claim 1,
characterized in that in the range of low actuation forces, the two drive mechanisms (34, 34') pull on the wedge (18) to generate the actuation force, in such a way that a tensile force excess in the actuation direction, representing the actuation force, results.

3. Brake according to Claim 1,
characterized in that in the range of low actuation forces, the two drive mechanisms (34, 34') press on the wedge (18) to generate the actuation force, in such a way that a compressive force excess in the actuation direction, representing the actuation force, results.

4. Brake according to one of Claims 1 to 3,
characterized in that the working direction of the two drive mechanisms (34, 34') can be reversed, and that the two drive mechanisms (34, 34') work together to achieve higher actuation forces.

5. Brake according to one of the preceding claims,
characterized in that the two drive mechanisms (34, 34') are in the form of linear actuators.

6. Brake according to Claim 5,
characterized in that each linear actuator has an electric motor (36, 36') with integrated spindle nut, a spindle in the form of a connecting rod (38, 38') and a rotation angle sensor.

7. Brake according to Claim 6,
characterized in that the position of the wedge (18) is controlled.

8. Brake according to Claim 7,
characterized in that the position control is cascade control with an outer control loop, the controlled variable of which is the braking moment and the manipulated variable of which is the position of the friction member (16) which is joined to the wedge (18), and with an inner control loop, the controlled variable of which is the position (which is determined from the position signals of the linear actuators) of the friction member (16) which is joined to the wedge (18), and the manipulated variable is the motor current or motor voltage of the electric motors (36, 36') of the linear actuators.

9. Brake according to one of the preceding claims,
characterized in that the wedge (18) for each of the two directions of rotation of the component to be braked, has at least one wedge surface (20, 20'), with, in particular, the same angle of inclination α.

10. Brake according to one of the preceding claims,
characterized in that the counter bearing (22) is supported on a caliper (26) which overlaps the component (14) to be braked.

11. Brake according to Claim 10,
characterized in that the component (14) to be braked is a brake disc and the caliper (26) is a sliding caliper.

12. Brake according to one of the preceding claims,
characterized in that there is a device to compare a setpoint value of the friction force with the actual value of the friction force, and when the actual value deviates from the setpoint value, the device triggers the electrical actuator to increase or reduce the generated actuation force correspondingly, and thus make the actual value of the friction force equal to the setpoint value.

13. Brake according to one of the preceding claims,
characterized in that the angle of inclination α decreases as the wedge (18) is increasingly moved in the actuation direction.